

Species

First report of black widow spider *Latrodectushasselti* Thorell, 1870, from Telangana, India

Pravalikha GB¹, Chelmala Srinivasulu^{1,2,*}

1. Natural History Museum and Wildlife Biology and Taxonomy Lab, Department of Zoology, University College of Science, Osmania University, Hyderabad 500007, Telangana, India

2. Systematics, Ecology and Conservation Laboratory, Zoo Outreach Organization (ZOO), 96 Kumudham Nagar, Vilankurichi Road, Coimbatore, Tamil Nadu 641035, India

*Corresponding author: Natural History Museum and Wildlife Biology and Taxonomy Lab, Department of Zoology, University College of Science, Osmania University, Hyderabad 500007, Telangana, India, e-mail: hyd2masawa@gmail.com

Publication History

Received: 27 April 2014

Accepted: 13 June 2014

Published: 10 September 2014

Citation

Pravalikha GB, Chelmala Srinivasulu. First report of black widow spider *Latrodectushasselti* Thorell, 1870, from Telangana, India. *Species*, 2014, 10(23), 19-23

ABSTRACT

Latrodectushasselti (Thorell, 1870), the black widow spider has been reported from many parts of India but was hitherto unknown from Telangana state, India. In this paper we give the first report of the black widow spider with notes on complete description of the external characters, their morphometry and the internal genitalia of the specimen.

Keywords: Black widow spider, Telangana

1. INTRODUCTION

Latrodectus Walckenaer, 1805, is a popular genus with clinical importance of the family Theridiidae Sundevall, 1833, which include spiders that are commonly known as comb-footed spiders. These are web building spiders and build tangle webs to catch their prey. They characteristically possess a distinct tarsal comb on tarsi of leg IV – hence the name ‘comb-footed spiders’. The family Theridiidae comprises 109 genera and more than 2000 have been species

Pravalikha and Chelmala Srinivasulu,

First report of black widow spider *Latrodectushasselti* Thorell, 1870, from Telangana, India,

Species, 2014, 10(23), 19-23,

© The Author(s) 2014. Open Access. This article is licensed under a [Creative Commons Attribution License 4.0 \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).

Table 1

Measurements of legs and palp of female *Latrodectushasselti*(Thorell, 1870) (OUNHM.ART.ARA.2011.29), from Telangana, India. Note: All measurements are in mm.

Leg segment	Leg I	Leg II	Leg III	Leg IV	Palp
Femur	3.98	2.83	2.10	3.94	0.63
Patella	1.19	1.25	0.97	1.13	0.36
Tibia	3.06	1.88	1.39	2.52	0.39
Metatarsi	4.11	2.59	1.67	3.56	-
Tarsi	1.35	0.93	0.87	1.21	0.59
Total	13.69	9.48	7.0	12.36	1.97



Figure 1

Live habitus of female *Latrodectushasselti*(Thorell, 1870) from Zaheerabad, Telangana, India; (inset) close up of the ventral side of the abdomen showing characteristic red markings

Comb-footed Spider:



The comb-footed spiders are so called basing on comb-like structure present on the tarsus of the fourth leg. These are venomous spiders, whose bite can be fatal to humans, though such report has not been so far reported from India.

Epigynum:



The female genital structure. It is a hardened plate on the underside of the abdomen in front of the genital opening. The internal epigynum consists of receptacles (spermathecae) connected to the oviducts.

Widow spiders:



Among the species belonging to the genus *Latrodectus*, prevalence of sexual cannibalism, a behaviour in which the female eats the male after mating, has led to them being generally referred to as "widow spiders".

known worldwide till date. The genus *Latrodectus* is known by 31 species worldwide (Platnick, 2014), among which only four species, namely, *L. geometricus* (Cl. Koch, 1841), *L. hasselti* (Thorell, 1870), *L. elegans* (Thorell, 1898) and *L. erythromelas* (Schmidt and Klaas, 1991), have been reported from India (Daniel and Soman, 1961; Hippagiri et al., 2012; Kananbala et al., 2012; Kumar and Siliwal, 2005; Pocock, 1900; Shukla and Gour Broome, 2007; Simon, 1897; Srinivasulu et al., 2013). We through this paper give the first report of the presence of *Latrodectushasseltii* from the state of Telangana, India.

2. MATERIALS AND METHODS

During one of the surveys to document the spider fauna of various districts of Telangana, we came across a female specimen of *Latrodectus* sp. in Zaheerabad, Medak district, that was collected, which after observing the morphological characters and epigynum was confirmed to be as *L. hasselti*. The specimen was collected in the fallow lands of Govindapur village, Zaheerabad Mandal (17°38.474'N and 77°32.964'E), Medak District, Telangana, India. The specimen was photographed in life and was preserved in 90% ethanol. It was examined and measured using Lawrence and Mayo stereozoom microscope. All measurements presented are in millimeters; epigynum was dissected and cleared in 1:1 NaOH solution for 24hrs to dissolve the sclerotization (Barrion and Litsinger, 1995). The cleared epigyne was observed under Olympus compound microscope.

2.1. Abbreviations

ALE, anterior lateral eye; AME, anterior median eye; CD, copulatory duct; FD, fertilization duct; Fe, femur; MOQ, median ocular quadrangle; OUNHM, Osmania University Natural History Museum; PLE, posterior lateral eye; WA, anterior width of the MOQ; WP, posterior width of the MOQ.

2.2. Diagnosis

The diagnostic characters that characterize the genus *Latrodectus* are carapace, normal in form; the lateral eyes being widely separated; chelicerae lacking marginal teeth; legs long, leg I longer than leg IV; abdomen globose; colulus large. Female genitalia with dumb-bell shaped seminal receptacles (Levi, 1959).

2.3. Material Examined

One female (OUNHM.ART.ARA.2014.30); Govindapur Village (17°38.474'N and 77°32.964'E), Zaheerabad Mandal, Medak District, Telangana, India; 1 February, 2014, coll. K. Krishna Prasad and B. Ramakrishna.

3. DESCRIPTION OF FEMALE

(OUNHM.ART.ARA.2014.30): Total length 8.10.

Carapace: black, fovea with radiating striae on sides; slightly wider than long, 2.33 long, 2.54 wide. Sternum: longer than wide, 1.64 long, 1.35 wide. Chelicerae: 0.72 long, cheliceral teeth absent. Labium: longer than wide, 0.41 long, 0.24 wide. Maxillae: 0.68 long, 0.37 wide. Eyes: eight, arranged in two rows, pale except AME, PME on low tubercles. Eye diameter and inter distances: AME=0.13; PME=0.14; ALE=0.10; PLE=0.14; AME-AME=0.15; PME-PME=0.18; AME-PME=0.16; AME-ALE=0.15; PME-PL=0.19; ALE-PL=0.20; MOQ: 0.43 long, WA-0.41, WP-0.46.

Legs: Measurements of the legs and palp are provided in the Table 1. Leg formula: 1423.

Abdomen (Figure 1): black with a bright orange stripe with uneven edges mid dorsally; ventrally with a small transverse red band in front of the spinnerets and one behind the genital fold (Figure 1). Abdomen longer than wide 5.77 long, 4.42 wide; globular, overlapping carapace; spinnerets situated towards posterior end.

Epigynum (Figure 2): with a pair of dumb-bell-shaped seminal receptacles, copulatory ducts coiled around the seminal receptacles, fertilization ducts curled, present laterally.

4. RESULTS AND DISCUSSION

The black widow spider *Latrodectushasselti* (Thorell, 1870), is a venomous Australian spider known from many locations in Southeast Asia, Australia and New Zealand. *L.hasselti* till recently was known to be occurring from Pune and Thane in Maharashtra, Vadodra in Gujarat, Coimbatore in Tamil Nadu and Nannaj in Maharashtra India (Daniel and Soman, 1961; Hippargi et al., 2012; Kumar and Siliwal, 2005; Siliwal and Kumar, 2001; Siliwal and Molur, 2007; Tikader, 1987). Although *L. hasselti* was reported from India since late 19th century (Pocock, 1900), other three species have been reported only recently from India- *L. geometricus* from Pune, Maharashtra (Shukla and Gour

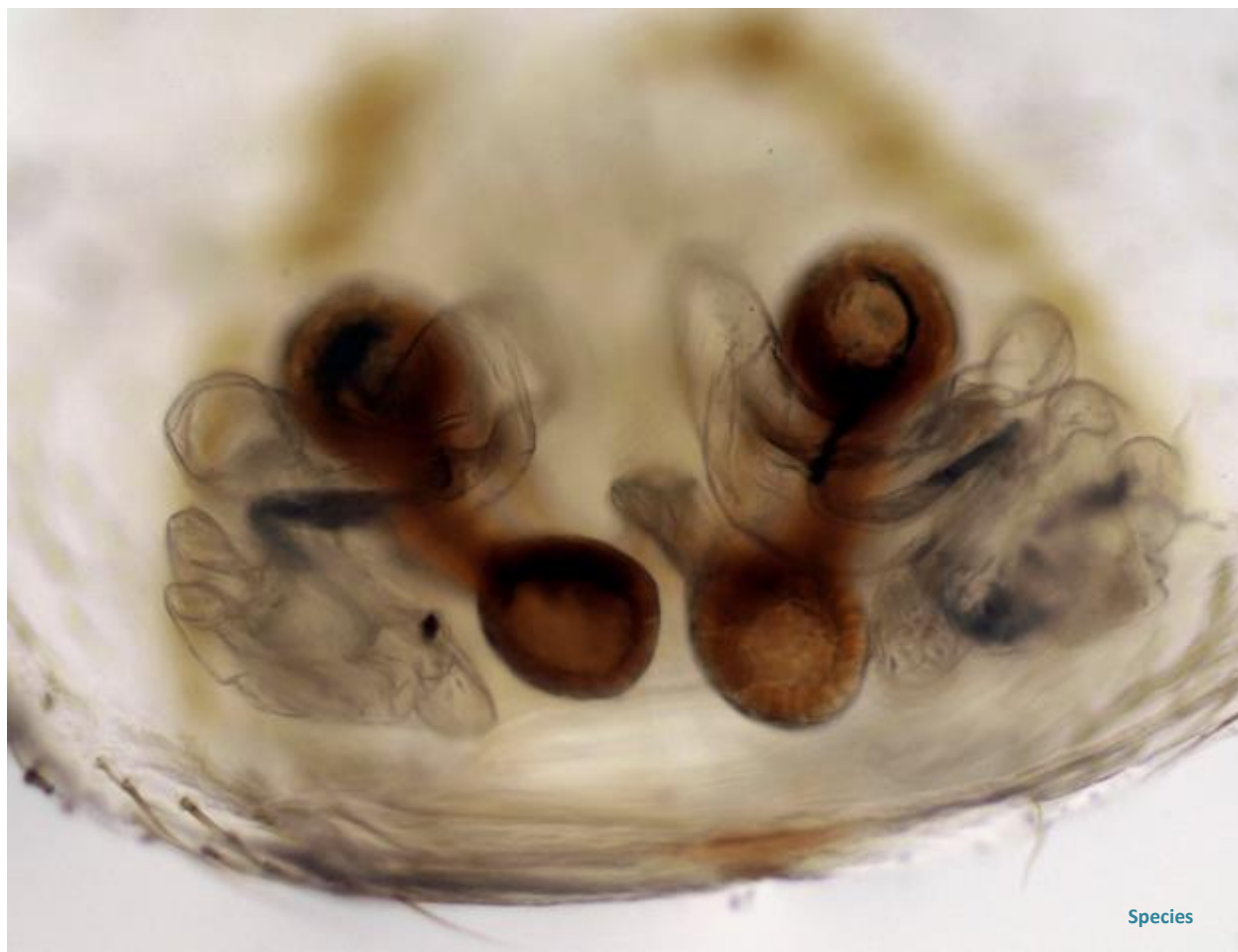


Figure 2

Epigynum of *Latrodectushasselti*(Thorell, 1870) in dorsal view showing dumb-bell-shaped spermathecae with coiled around fertilization duct and curled copulatory ducts

Broome, 2007); *L. elegans* from Manipur (Kananbala et al., 2012) and *L. erythromelas* from Hyderabad (Srinivasulu et al., 2013). *L. hasselti* is now known to be found commonly in India, but the reports of its occurrence have been wanting due to its secretive nature and lack of studies. In Telangana, this species was found in a semi-arid habitat under a rock. Further studies may yield in the discovery of the species from other parts of India.

ACKNOWLEDGEMENTS

We thank the Head, Department of Zoology, Osmania University, Hyderabad, for providing necessary facilities; Shri. A.V. Joseph, IFS, Chief Conservator of Forests (Wildlife), Andhra Pradesh Forest Department for encouragement. We acknowledge UGC, New Delhi; DST-SERB, New Delhi and UGC-UKIERI, New Delhi for research grants.

REFERENCES

1. Barrion, AT, Litsinger JA. *Riceland spiders of South and Southeast Asia*, (1995), 716 pp. CAB International, UK and IRRI: Philippines
2. Daniel JC, Soman PW. Observations on the spider *Latrodectushasseltiindicus* Simon with a note on arachnidism. *Jour Bombay NatHist Soc*, 1961, 58(3), 823–826
3. Hippargi RV, Bolde PM, Manthen SV, Shaikh AR. Ecology of venomous spider *Latrodectushasselti*Thorell, 1870 (Araneae: Theridiidae) from Solapur and Osmanabad District, Maharashtra. *Indian J Arachnol*, 2012, 1(1), 169–174
4. Kananbala A, Manoj K, Bhuvaneshwari M, Binarani A, Siliwal M. The first report of the widow spider

- Latrodectuselegans* (Araneae: Theridiidae) from India. *Jour ThreatTaxa*, 2012,4(7), 2718–2722
5. Kumar MG, Siliwal M. Range extension of *Latrodectushasselti*Thorell, 1870 (Araneae: Theridiidae). *Zoos' Print Jour*, 2005, 20(11), 2072
 6. Levi HW. The spider genus *Latrodectus* (Araneae:Theridiidae). *Trans of the Amer Micro Soc*, 1959, 78(1), 7–43
 7. Platnick NI. The World Spider Catalog, Version 13.5, American Museum of Natural History, 2014. <http://research.amnh.org/iz/spiders/catalog/THERIDIIDAE.html>
 8. Pocock RI. *The Fauna of British India, Including Ceylon and Burma –Arachnida*, 1900, Taylor and Francis, London, 237
 9. Shukla S, Broome VG.First report of the Brown Widow Spider, *Latrodectusgeometricus* C. L. Koch (Araneae: Theridiidae) from India. *Current Science*, 2007, 93(6), 775–777
 10. Siliwal, M, Kumar D. Rare sighting of poisonous spider *Latrodectushasseltiindicus* Simon (Araneae: Theridiidae) in a cotton field in Baroda District, Gujarat. *Current Science*, 2001, 81(9), 1170
 11. Siliwal, M, Molur S. Checklist of spiders (Arachnida: Araneae) of South Asia including the 2006 update of Indian spider checklist. *Zoos' Print Joul*, 2007, 22(2), 2551-2597
 12. Srinivasulu, C, Srinivasulu B, Javed SMM, Seetharamaraju M, Jyothi SA, Srinivasulu CA, Tampal F. Additions to the araneofauna of Andhra Pradesh, India - part II. Records of interesting species of the comb-footed genera *Latrodectus*, *Rhomphaea* and *Coleosoma* (Araneae: Theridiidae). *Jour of Threat Taxa*, 2013, 5(10), 4483–4491
 13. Tikader BK. *Handbook of Indian Spiders*, Zoological Survey of India, 1987, 210–213.Calcutta